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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,323	10/29/2004	Khaliq Ahmed	0446-0170PUS1	8341

2292 7590 10/10/2008
BIRCH STEWART KOLASCH & BIRCH
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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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10/10/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/506,323	Applicant(s) AHMED ET AL.	
	Examiner Jonathan Crepeau	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3,5,14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/2/04 11/19/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I in the reply filed on 7/10/08 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 7, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 9-073913. In the abstract, the reference teaches a solid oxide fuel cell comprising an electrolyte (3), an inner anode layer (2) and an outer anode layer (2') having a hydrocarbon reforming function. The inner layer comprises nickel oxide and yttria-stabilized zirconia and the outer layer comprises nickel oxide and MgAl_2O_4 . The latter component functions to alleviate carbon deposition on the electrode during reforming (see abstract). Regarding claim 6, MgAl_2O_4 corresponds to the claimed alkaline earth based materials oxide. Regarding claim 7, in [0007] of the machine translation, it is disclosed that the MgAl_2O_4 is present in an amount of 30-60 vol%, which is considered to be anticipatory of the claimed weight percentage of 1-60 wt%. Regarding

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claim 13, a porous ionically conductive layer (1) comprising NiO/CSZ overlies the hydrocarbon reforming layer (see [0009]).

Thus, the instant claims are anticipated.

4. Claims 1, 2, 4, 6-8, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 5-067472. In the abstract, the reference teaches a solid oxide fuel cell comprising an electrolyte, an inner anode layer (1) and an outer anode layer (2) having a hydrocarbon reforming function. The inner layer comprises nickel and yttria-stabilized zirconia and the outer layer comprises nickel and a "basic aggregate" material. The latter component functions to alleviate carbon deposition on the electrode during reforming (see abstract). Regarding claim 4, the hydrocarbon reforming layer entirely covers the inner anode layer (see Fig. 1). Regarding claim 6, the component for alleviating carbon deposition can be MgAl_2O_4 , CaAl_2O_4 , or CeO_2 (see [0013] of machine translation). Regarding claims 7 and 8, it is disclosed that the Ni is present in the reforming layer in an amount of 35-60 vol %. Thus, the component (e.g., MgAl_2O_4) would be present in an amount of 40-65 vol%, which is considered to be anticipatory of the claimed weight percentage of 1-60 wt%. Regarding claim 10, the cell is an electrolyte-supported cell and the thickness of the reforming layer is 50 microns (see [0022]). Regarding claims 11 and 12, each layer has a porosity of 20-30% (see [0022]).

Thus, the instant claims are anticipated.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 5-067472.

The reference is applied to claims 1 and 2 for the reasons stated above. However, the reference does not expressly teach that the hydrocarbon reforming layer also comprises zirconia, as recited in claim 9.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to include YSZ (yttria-stabilized zirconia) in the hydrocarbon reforming layer of JP '472. YSZ is disclosed throughout the reference as affecting the thermal and ionic conductivities of the anode layer, as well as the catalytic activity. The substitution of a small amount of YSZ for the carbon-alleviating component in the reforming layer would be within the skill of the art, in view of the optimization and matching of the properties of the two layers, especially at the interface thereof. Accordingly, claim 9 is considered to be obvious to a skilled artisan.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299.

The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795
October 10, 2008